



MEMBER ASSOCIATION OF



JUNE 1988

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PRESIDENT'S MESSAGE

During the 25th A.D.A. Congress on May 20th, a special meeting of the A.S.D.C. carried a motion unanimously, allowing changes in the Constitution to alter the name of our Society. It was resolved to rename the Society the Australian & New Zealand Society of Paediatric Dentistry.

It will be necessary for A.D.A. Federal Council to ratify this change and I have written to and spoken with Dr. Colin Wall re this matter, and he has promised to expedite this as soon as possible - hopefully before our Biennial Convention in October. I would hope that this change will enable a substantial increase in membership of our expanded Society.

Great concern was expressed by Dr. Joe Verco and Dr. Peter Gregory about the decline in membership, at our meeting in Sydney. Members will be aware that the majority of dental services to children in Australia are delivered by dental therapists and dentists who are not members of our Society. Inflexible rules, demanding full A.D.A. Membership as a pre-requisite for affiliate society membership remain the major obstacles to attracting membership to our Society, from non-A.D.A. members of the the School Dental Services. I personally would welcome any suggestions as how we could

arrive at a compromise to allow non A.D.A. members into our Society - I see no solutions!

I attended the scientific programme at Congress and I would like to briefly comment on points of interest to our membership. Of the principal speakers, I found Dr. Richard Simonsen from Memphis Tennessee the most relevant. In his lecture on sealants and preventive resin and sealant restorations, he stressed 15 seconds etching with liquid etchants (gel etchants may trap air bubbles) and he prefers auto-polymerization resins because he feels they are faster and likes the white colour and the use of a radio opaque resin. He lines his cavity preparations with calcium hydroxide and uses a specially designed instrument for sealant placement.

In the aesthetic uses of composite resins some interesting points were, that Dr. Simonsen feels that bevelling of all enamel margins achieves the etching of the enamel prisms; he dislikes the uses of pins in Class IV restorations and he feels microfilled resins are adequate for these restorations.

In the treatment of partial discolourations where the gingival one-third only is involved, he prefers minor discoloured enamel removal and composite partial coverage with careful marginal polishing; rather than attempting a full composite veneer.

With incisal edge fractures if the fragment is saved and non-dehydrated, Dr. Simonsen utilizes the fragment, using an internal bevel on the enamel of the tooth and fragment, and bonds with composite in the normal way.

Of the Australian speakers, I was somewhat bemused with the lecture by Prof. G. Craig, which provided me personally with a less than nostalgic trip down dentistry's "memory lane". This contrasted with the "state of the art" presentations by other A.S.D.C. speakers. Drs. Widmer and Middleton presented poster displays which were colourful and easy to read, on Sealants and Trauma to the primary teeth. I visited the table demonstrations by Dr. K. Allen on the electronic caries detector; and acid etching of intrinsic enamel stains by Dr. J. Brownbill. Both of these table demonstrations were excellently presented and well attended.

Dr. Kim Seow presented a very comprehensive lecture on the clinical management of the paediatric dental patient, ranging from behaviour management to the treatment of dental anomalies, utilizing inter-disciplinary approaches. Her strategies for these problems were presented professionally and her lecture was well received.

I had the pleasure of chairing the seminar on "Faces, how to describe them and what they tell us". This Seminar was well

conceived, comprehensively presented and carefully summarised. It was of interest and value to general and specialist practitioners alike. Dr. Tony Lipson and Ms. Anne Robinson described normal facial features and speech, and then gave descriptions of subtle and obvious deviations from the normal. Dr. Richard Widmer then illustrated the dental relevance of these deviations and conditions and brought these to the awareness of the audience, in a very concise and comprehensive summary. Anomalies such as cleft palate, ectodermal dysplasia and partial anodontia were all discussed in detail and with treatment options given. I was unable to attend the Free Papers given by Dr. J. Verco and Dr. K. Seow but on hearsay they were also well received.

In conclusion I must sound one sour note. I counted less than twenty A.S.D.C. faces I knew at the Congress!

Let us hope we can support the Biennial Convention in Brisbane with a bigger attendance.

Bruce A. Tidswell

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#### LETTERS TO THE EDITOR

I wish to publicise that I intend to move the following or similar motion at the General Meeting of the Society in Brisbane in October. I invite potential seconders to submit appropriate amendments.

That it is the ethical obligation of all providers of dental care for children to place sealants on all non-carious susceptible pits and fissures of recently fully erupted permanent teeth.

Provided that the resolution is passed, I wish to foreshadow the following or similar motion.

That the above resolution be forwarded to all Branches of A. & N.Z.S.P.D., the State Branches and Federal A.D.A., and the N.H. & M.R.C. for endorsement and publicity.

In explanation here are some notes for cogitation:

"Providers of dental care" includes all dentists or dental auxiliaries in private or government service.

"Sealants on" rather than "sealants in" in recognition of the recommended extension onto inclined planes.

Carious pits and fissures should be treated as the clinician judges.

"Susceptible" recognises that morphological and site variations alter the susceptibility of pits and fissures to caries. Specifically the motion would condemn the "watching" of pre-carious pits and fissures.

"Recently fully erupted" recognises that sealants cannot be readily placed on partly erupted teeth, but that the sooner after eruption that they are placed the better.

"Permanent" recognises that individual providers may ethically decide about deciduous teeth as their clinical judgement dictates.

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#### Editor's Note

Any member interested in seconding Dr. Brownbill's motion please contact Dr. Brownbill and the Federal Secretary.

#### COMMUNICATION IN CRANIO-FACIAL SYNDROMES

Anne Robinson, Speech Pathologist,  
Dental Clinical School, Westmead Hospital

Some cranio-facial syndromes are fairly obvious at birth, as in facial clefting or Down's Syndrome. Other syndromes are more subtle and the diagnosis is often delayed. In the case of Submucous Cleft Palate the average age of diagnosis is 4 years, but not infrequently is 19 years. Many children and families who have had a late diagnosis of a syndrome have experienced considerable difficulties in the areas of feeding, communication, hearing, learning difficulties and psycho-social problems. The sooner the diagnosis is made the sooner the patients and families can be given specific help for their problems.

In developing an awareness of Cranio-Facial Syndromes it is valuable to listen to a patient's speech as well as to observe their facial and dental features. When listening to a patient there are four main features to consider.

#### Articulation

The first is the accuracy with which sounds are produced. Speech Pathologists refer to this as Articulation. It includes such features as:

omission of sounds as in "un" for "sun"  
substitution of sounds as in "dun" for "sun"  
and distortion of sounds as in "thun" or "sun"  
(nasalized) for "sun"

### Language

The second feature is "language" which refers to the appropriate selection of words, word order and grammatical features to express a given concept. It also refers to a person's ability to understand the language of others. Common language errors include word substitutions, incorrect use of grammar and word order. More subtle difficulties may include the inability to introduce and maintain a topic of conversation and the inability to understand and contribute to group discussions.

### Voice Quality

The third feature is "voice quality", which refers to such features as pitch, volume, resonance and laryngeal tension. Common problems in this area may include hoarseness, breathiness and inappropriate pitch and loudness.

### Fluency

The final feature is "fluency" which refers to the smoothness with which sounds, syllables, words and phrases are joined together during speech. Problems in this area are commonly referred to as stuttering or stammering. Symptoms may be fairly subtle such as an occasional repetition of a syllable or word or blocks within speech. More severe symptoms include severe repetition, blocks, the use of intrusive phrases and habituated bodily jerks.

For most children the development of language proceeds in a predictable orderly fashion. When a child's development is more than 6 to 12 months slower than normal further investigation is indicated.

### Normal Speech Development

Soon after birth, differences emerge between the baby's cries of pain hunger and tiredness. From 3 to 6 months the child develops vowel like sounds which are known as cooing. By this stage they can also respond to the tone of an adult's voice. Between 5 and 12 months the child starts to produce consonants in different rhythmical patterns. This is known as babbling. All children babble to a greater or lesser extent but those with a severe to profound hearing loss will not maintain the babbling as they are unable to hear it. At around 12 months the consonant-vowel strings in babbling become longer. There may be no real words, but it has the right intonation and sounds like talking.

First words emerge at around 12 to 18 months. The words may not sound exactly like a real world, and adults may have difficulty understanding them, but the child uses them consistently to refer to a definite thing. From around 15 to 24 months two-word sentences appear. Children develop six basic forms of two-word sentences which then form the basis of all adult utterances.

From 2 to 4 years children develop the art of talking in sentences and learn the rules of grammar. During this phase, grammatical errors are common. By 4 to 5 years the child has basically mastered the form of adult sentences although they may still make errors on some of the more difficult sounds.

As with language, children acquire the sounds of speech in a predictable pattern. Whilst the pitch and volume of a person's voice are judged with reference to their age and sex, there are no distinct patterns in the development of voice quality and fluency. In these areas further investigation is warranted whenever an abnormality is perceived to be present.

#### When to suspect a problem

There are several general symptoms which may alert you to suspect that a patient has a communication problem.

The first is intelligibility, or how easily the person's speech is understood. Intelligibility can be influenced by breakdown in one or more of the four aspects of communication; language, articulation, voice or fluency. It is normal to understand about 50% of the speech of 2 year olds, 75% of the speech of 3 year olds and almost 100% of speech of children 4 years and over. If a child's speech is abnormally hard to understand further investigation is indicated.

The second feature is in the area of non-verbal communication. This commonly takes the form of the patient avoiding communication. Some children rely on their parents to answer questions from others while some older children and adults rely heavily on gesture.

The third feature is that the child sounds immature for his age. This may be a good indicator of development delay.

#### Factor influencing communication in Cranio-Facial Syndromes

There are a number of factors which influence communication in a patient with a Cranio-Facial Syndrome. They are hearing loss, structural abnormalities, neurological impairment and environmental/psychological factors. Each of these factors will be discussed in more depth with some examples from case studies.

## Hearing Loss

Sanger et al. (1984) have noted a high incidence of hearing loss in patients with a Cranio-facial syndrome and syndromes including anomalies of the skin, hair, nails and teeth. There are two types of hearing loss. The most common one is a "conductive" loss which can be caused by structural abnormalities, middle-ear infections resulting in "glue ear" and scarring of the tympanic membrane. Over 90% of children with a cleft palate will develop "glue ear" at some stage through childhood. For some children it is a chronic condition spanning a number of years. Glue ear can be associated with a reduction in hearing of up to 50%. The other more severe loss is "sensori-neural" which refers to damage of the cochlear, auditory nerve or cranial nerve nuclei.

A hearing loss can effect language, articulation and voice quality. With respect to articulation, the symptoms may be omission of high frequency sounds such as /f/ and /s/, or the substitution of sounds with voicing where no voicing is used, so that /p/ becomes /b/, /t/ becomes /d/ and so on, as result "puppy" becomes "bubby" etc. Language is often delayed because of their inability to hear correct models while voice quality may be characterised by excessive volume, too much nasal resonance and reduced pitch range, that is, they speak in a monotone.

## Structural Abnormalities

Structural abnormalities of the oral cavity are also very common in Cranio-Facial syndromes.

The most common abnormality of the tongue is macroglossia which is present in Beckwith-Weideman Syndrome and to some extent in Down's Syndrome. The main speech symptom of macroglossia is articulatory imprecision. That is, the speech sounds slurred and at times the consonants will be omitted because the tongue is unable to move with enough precision to satisfy the demands of normal rapid speech.

Abnormalities of the lip and palate are generally associated with clefting. For example the lip pits of Van - Der Woude's Syndrome which is often associated with a conductive hearing loss and cleft palate. Abnormalities of the lip rarely effect speech, at worst the patient may have some difficulty with /p,b/ and /m/.

Patients with abnormalities of the palate will have a severe articulation disorder. Their speech is characterised by very weak production or omission of consonants, excessive nasal air escape and hypernasality i.e. too much nasal resonance. These patients may also have a hoarse voice arising from vocal pathology which has development in response to the

speech compensations for palatal insufficiency.

A more subtle defect of the palate is the submucous cleft palate. As I noted earlier, the average age of diagnosis of this condition is 4 years with a number of cases not diagnosed until much later. There are three main symptoms.

\*The first is bifid uvula.

\*The second is a "V" - shaped lift of the soft palate on phonation. This occurs because the mucosal covering is being pulled up between the muscular bands of the levators which insert into the back of the hard palate instead of interdigitating in the midline.

\*The third feature is a notch or groove which can be felt at the junction of the hard and soft palates, where the muscle fibres are inserting. These patients often have a history of early feeding difficulties and chronic hearing problems. In some cases, patients compensate extremely well and their speech symptoms may be restricted to mild nasal air escape.

The third aspect of structural abnormalities of the oral cavity relates to congenital absence of teeth and malocclusion. Absence of the upper incisors is likely to effect articulation especially production of "f" and "th" but may also effect sounds normally produced behind the teeth, namely /s,z,t,d,n,l,/.

The presence of a malocclusion may be associated with other articulatory distortions. An anterior open bite may be associated with a tongue thrust and lisp, similarly a severe class III may be associated with an inter-dental lisp, that is "th" for "s".

Children with a repaired cleft palate who have maxillary collapse and cross bite often have a lateral lisp as in -s- for "s". Sometimes the lisp is very hard to correct before orthodontic management.

### Neurological Impairment

Not all children who have Cranio-Facial Syndromes suffer from neurological impairment. For those with cortical impairment the symptoms may be severe developmental delay or specific learning difficulties or difficulties in motor planning, that is, they have trouble co-ordinating the muscle movements needed for speech. The symptoms may include delayed speech and language development or there may be more specific language and articulation problems.

The speech of patients with Brainstem involvement may be slurred or characterised by inability to produce some



consonants. The voice quality may be abnormal with symptoms ranging from hoarseness to a tight strangled quality, while language may be delayed due to difficulties in communicating.

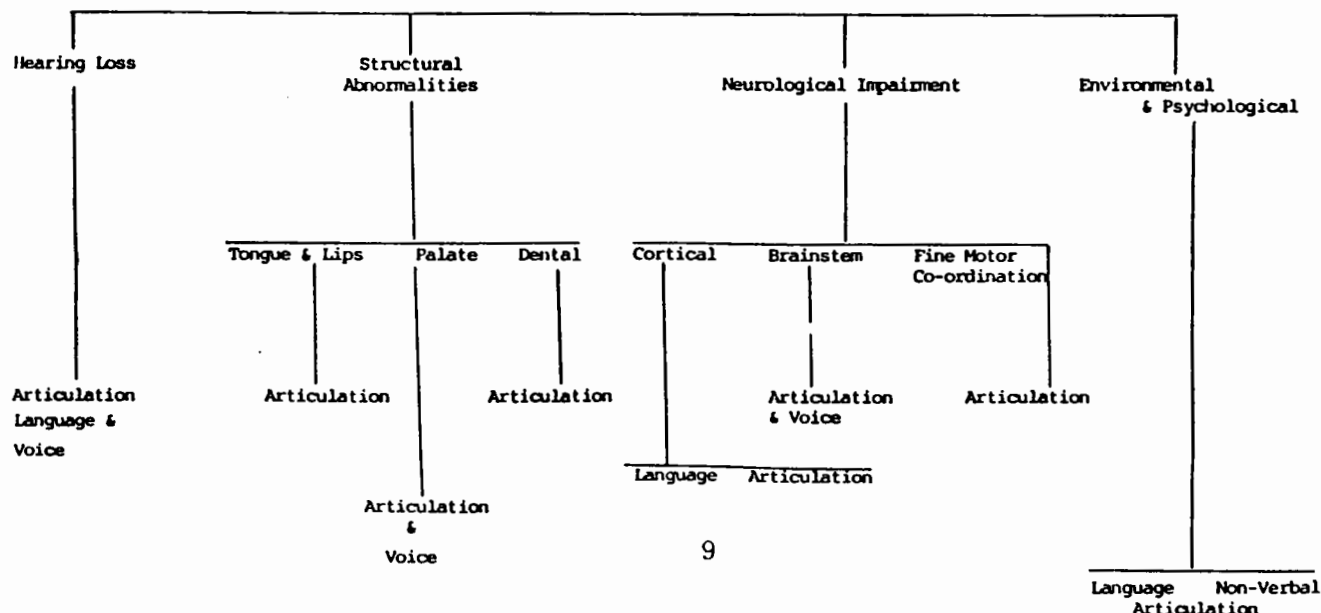
Some children have difficulties with fine motor co-ordination, they may be known as "clumsy kids". These children sometimes have articulation problems ranging from omission to substitution to distortion. Their symptoms tend to get worse when they are speaking quickly or are fatigued. Some children who initially present with symptoms in this area may have mild cerebral palsy.

### Environmental and Psychological Factors

The final group of factors influencing communication in patients with Cranio-Facial Syndromes is that of environmental and psychological factors. Children who have missed out on normal activities in the environment due to illness or hospitalization often have delayed speech and language development. Children with facial or body deformities may suffer from adverse reactions when trying to communicate. For example, children with Mobius Syndrome have no facial expression and often are unable to make eye contact. This can be very disconcerting for other speaking to them and tends to interfere with the normal communication process. Sometimes these children become withdrawn and try to avoid communicating.

Communication breakdown can occur through any one or combination of these factors. It may be the little things like speech which alert us to the possibility that a patient may have more serious problems. With early diagnosis patients can be given specific help earlier with the hope that some surgery and special education placement later on may be avoided.

#### FACTORS INFLUENCING COMMUNICATION IN CRANIO-FACIAL SYNDROMES



## SECRETARY'S NOTES

On Friday May 20th, 1988 at a special General Meeting of our Society held at the 25th Australian Dental Congress, a motion to alter our Constitution as circulated to all members in our March Newsletter, after minor amendment, was passed unanimously.

The most obvious change is that we are now the "Australian & New Zealand Society of Paediatric Dentistry", and we have freed up our previously restrictive membership and administrative rules which were inappropriate for a Society of such small membership.

However, we are still confined by the strict A.D.A. Rules for Affiliated Societies, so debate on membership for parodontal personnel is fruitless at this stage. The Western Australian delegate felt strongly about this apparent disregard for the people who treat the overwhelming majority of children in Australia, and the Executive was instructed to look into the ways and means of forming closer ties with these groups.

When I have tidied up the loose ends for the formal adoption of our new Constitution, I will have printed a new Constitution booklet which will be distributed to every member, hopefully before our own Biennial Conference in Brisbane in October.

Dr. J.G. Keys - Secretary

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## BRANCH NEWS

### Victoria

The second meeting of the Branch was held at University House, University of Melbourne on 28th April, 1988. The attendance was exceptionally good and an acknowledgement of the Guest Speaker, Professor Louis Waller.

The Branch President, Dr. Chris Olsen, informed the meeting of the distinction bestowed on Professor Elsdon Storey in his being honoured with the title Emeritus Professor at the University of Melbourne. Formal congratulations are to be extended on the Society's behalf to Professor Storey.

Dr. Roger Hall elucidated on details relating to the I.A.O.C. Conference in Athens, June 1 - 5, 1989, the theme being Nutrition in Dental Health and Orthodontics. He invited members to attend and to contribute papers.

Professor Louis Waller, our Guest Speaker, has held the Sir Leo Cussen Chair of Law at Monash University since 1965. He

has played a leading role in the Law Reform Commission of Victoria since 1982.

He discussed the importance of, in relation to informed consent, the patient having a choice regarding treatment once informed of the risk involved in such treatment. He cited a case in the medical field of a patient instigating litigation proceedings in England, the complaint being very specific. This was that the patient had not been told before her operation that there was a quantifiable, identifiable risk.

Professor Waller could not give an unequivocal answer relating to the extent of a doctor or dentist's disclosure, and advised giving clear information regarding risks, outlining a range of choice, that a reasonable patient would want to know. Against this background, and with a background of specific cases of informed consent relating to medical treatment, where doctors had not revealed risks and consequences of treatment, the Law Reform Commission in late 1985 laid down the first specific terms of reference regarding medical treatment.

A discussion paper, published by the Law Reform Commission in October 1987, related to medical, paramedical and dental treatment, and presents the issues relating to informed consent. It postulates a series of responses that the Commission may decide to recommend to the Attorney-General. The recommendation may be the enactment of legislation relating to doctors and dentists in Victoria.

Professor Waller suggested referral to the discussion paper "Informed Consent to Medical Treatment" October 1987, available through the Law Reform Commission of Victoria. This paper was written within the context of competent adult patients, not mentally ill, disabled or children.

Informed consent relating to children requires specific and separate attention. Although very important, it is often attended to with uncertainty. There is no statutory provision relating to children, leaving legal action to common law. The position with regard to children, and specifically to dental treatment, is basically the same as with competent adults.

Treatment should be rendered only if the child consents. In many cases, the child, because of age, is quite incapable of understanding what the treatment involves and hence agrees. Consent of parent(s) is thus critical. Consent is required for 13 to 17 year olds from parents.

Based on relevant court cases in England, if the child is sufficiently aware and mature to understand the treatment proposed, the decision can lie as a heavy burden on the dentist. Legislation being prepared may address this issue.

The "Consent to Medical and Dental Proceedings Act of S.A. 1985" was discussed.

The S.A. legislation is an attempt to provide the community and professions with a clear statement of when it is lawful to give treatment to minors under sixteen years, where parents are absent or unwilling to give their consent.

For children who are intellectually disabled or mentall ill, consent is required from a guardian or parent.

An active question time followed the presentation.

Leigh Pagonis

#### Western Australia

The second meeting for the year was conducted at the Mount Henry headquarters of Dental Health Services. It took the form of two practical demonstrations. The first was given by Dr. Peter Jarman and was of a method he uses to provide fixed space maintainers. This involved using either an orthodontic band or metal crown to which the "female" section is spot welded and then soldered. The "loop" is then fitted to this section, made of an appropriate length and crimped in place. The entire process is done at a single appointment and all prsent were suitably impressed with the case, speed and simplicity of the technique. The second demonstration ws equally impressive as Dr. Peter Gregory showed his method of rubber dam application. Peter uses a "slit technique" and he ws able to demonstrate firstly, how straight foward this can be once one has developed a routine and an armamentarium, and secondly how essential he considers rubber dam to be in his practice both from the point of view of a behaviour management aid and from the point of view of providing the best possible working field.

The next meeting will be the two day Behavioural Management Workshop to be conducted in Margaret River (near Cape Leeuwin) on July 8th and 9th.

Alistair Devlin

#### South Australia

The S.A. Branch held its April meeting at the University of Adelaide Staff Club with attendance of all members and two guests. Our Guest Speaker was Dr. David Morris, Clinical Superintendent of the Queen Victoria Maternity Hospital. With the support and funding of Rotary the Q.V.M.H. has begun a series of educational videos on health issues for young people. The first video "Think Twice" ws shown to our members. It dealt with adolescent sexualtiy and drug and alcohol abuse in the format of an afternoon's swimming party

for three teenage girls. The video is used in high schools and also parent/teacher nights as a basis for discussion about the many issues touched on. These included teenage pregnancy, parent/teenager relationships, peer pressure, assertiveness, responsibility, sexuality, alcohol and drug use. Dr. Morris continued with the activity package associated with the video. Teenagers and others are encouraged by the group leader/educator to discuss, debate, role play and research individual topics. Our members then had the opportunity to comment and question the speaker. It was agreed by all that the video was a worthwhile starter to discussion of the concerns of parents and teenagers. The next video "Laura's Pregnancy" will be shown at the S.A. Branch Winter Weekend July 22, 23 to be held at the Old Clarendon Winery.

Meredith Fantham

#### N.S.W. Branch

The Branch held its 51st General Meeting on Tuesday 22nd March, 1988 at the Glenview Inn and Function Centre, St. Leonards. Our Guest Speaker was Dr. Ian Walters who gave a very interesting talk on "Building Better Faces - An Orthopaedic Approach". Dr. Walters has prepared a synopsis of the paper he delivered to the A.S.D.C. - N.S.W. Branch which appears elsewhere in this Newsletter.

Our next General Meeting will be held on Tuesday 20th September, 1988. Our Guest Speaker will be from the Child Development Unit - Camperdown.

Judy Fenton

#### Queensland

The last Bi-Monthly meeting of the Queensland Branch was held in the Owen Pearn Seminar Room at the University of Queensland Dental School on Monday 28th March, 1988. The Guest Speaker was Dr. Irene Apel who delivered a warm and wordly presentation on Psychiatric Disorders in Children Generally.

Dr. Apel reminded us that adults are big kids; not kids little adults. Factors which have a disturbing effect on children when subject to change included:

- Genetic endowment
- Environment
- Bonding Factors
- Development of Self Esteem

Dr. Apel continued then to enumerate those environmental factors which can so disturb children. The need to find out

what a child is thinking when a problem arises might mean resorting to drawings to win their confidence. Certainly a barrage of instructions might only exacerbate an already difficult situation especially as children become adept at not listening from three years of age. The profound problems of treating Autistic children were touched on before moving onto and closing with treatment of special children.

The next Bi-Monthly meeting of the Branch will be held on 6th June 1988 with Guest Speaker Dr. G. Seymour who will deliver a talk on "Periodontal Conditions in Children".

Paul Killoran

FROM THE JOURNALS  
with John Burrow

INCIDENCE OF EXTERNAL ROOT RESORPTION IN BLEACHED PULPLESS  
TEETH

Bleaching has been advocated as a simple, conservative alternative to prosthetic restoration of pulpless teeth, many of which undergo noticeable discolouration. It is performed intracoronally with 30% hydrogen peroxide (Superoxol), which may be activated by heat or sealed for a few days in the pulp chamber mixed with sodium perborate (walking bleach). Both these techniques are effective, with 80-90% being considered satisfactory postoperatively. However, only 30-45% remained fully satisfactory after 1-5 years.

It has been demonstrated that bleaching with Sueproxol may result in cervical root resorption. Ankylosis has been also observed in bleached teeth. The increasing frequency of case reports and the recent report of 11 cases by Cvek & Lindvall suggest that external root resorption following bleaching with Superoxol may not be a rare phenomenon.

In this study 58 teeth in 46 patients were examined after a period of 1-8 years. Bleaching was performed in all teeth with 30% hydrogen peroxide. Advanced external resorption was found in 2 of the 58 teeth and arrested external resorption was found in a further 2 teeth. This represented only 7% of the bleached teeth showing signs of root resorption.

The mechanism of irritation has not been agreed upon; the caustic effect of 30% peroxide on the periodontal ligament may cause an inflammatory reaction, which results in resorption, alternatively, it may denature dentine and provoke an immune response. The suggestion that bleaching-related resorption is more likely in young teeth, in which patent dentinal tubuli are present, cannot be supported by these results. (FRIEDMAN S., ROTSTEIN I., et al Endod Dent Traumatol 1988;4:23-26)

## A STUDY OF THE EFFECTIVENESS OF TWO TYPES OF TOOTHBRUSHES

The brushing of the teeth and gingiva has been the home care procedure most widely recommended to promote oral cleanliness. The type of tooth brush that should be used depends largely on the method of toothbrushing, positioning of the teeth, and manipulative skills of the person. No specific toothbrush can be recommended as being superior for routine use for the removal of plaque and the control of periodontal disease. A soft bristle brush was found to be more effective in plaque removal in one study.

A toothbrush recently has been developed and manufactured that has curved monofilament .009-in diameter bristles on the lateral aspects of the brush head and a short row of 1/8-in long bristles in the centre. The brush, named Collis-Curve after its creator Dr. George Collis, is reported to clean interproximal and gingival sulcular areas more effectively than a straight bristled brush when used in a horizontal brushing method.

The purpose of this study was to evaluate the effectiveness of the Collis-Curve brush in removing oral accumulation of plaque and debris and preventing gingivitis when compared with a control group using a straight bristle brush.

A total of 578 children in grades 6, 7 and 8 were examined in this study. Baseline scores for both plaque index and gingival index were recorded at the examination after which each child was given a toothbrush randomly drawn from a box containing equal numbers of the two types of brushes. The children in the study were given instructions about the proper use of toothbrushes in cleaning teeth.

There was a significant improvement in both gingival and plaque scores in the two communities of students using regular as well as curved bristle brushes. There was, however, a statistically significant improvement among students using the Collis-Curve toothbrush and this would appear to be a direct result of the functional efficiency of the brush over that of the regular brush. No distinctions were made to students or teachers to point out that one kind of brush might be more effective or require less effort in brushing the teeth.

On the basis of results obtained in this study, it appears that the use of the Collis-Curve toothbrush significantly improves the condition of the gingiva and helps in removing dental plaque when used by children in grades 6 to 8.

(SHORY N., MITCHELL G., JAMISON H. JADA Vol 115, Nov. 1987, 717-720)

## THE ELECTRONIC DETECTION OF DEMINERALISATION IN OCCLUSAL FISSURES

The amount of clinically detectable dental caries in young people has been observed to fall in many developed countries over the past 20 years. Studies that have used surface scores as the basis of data collection reveal the additional finding that the overall reduction in caries experience is accompanied by an alteration in the distribution of lesions. In particular, as caries experience falls, the proportion of pit and fissures lesions increases, until it accounts for up to 84% of the total. The effect has been observed in both fluoridated and low fluoride communities.

Examination of fissures with a sharp explorer is probably the most traditional method. However, it is notoriously unreliable. There is evidence that forceful probing may create cavitation in an area of enamel demineralisation. The bitewing radiograph will show only dentinal caries and by the time this is detected, demineralisation is often approaching the pulp.

This study describes results obtained using the Vanguard electronic caries detector. The machine measures resistance of the tooth to the passage of a small battery-generated current. The study was designed to compare the validity of five "in vivo" methods of caries detection with the histological appearance of the sectioned teeth.

The results showed that the Vanguard correctly recognised 26 of the 37 teeth found to be demineralised on histological examination, which represents a sensitivity of 70%. The machine correctly recognised 11 of the 13 sound teeth, which is a specificity of 85% and also diagnosed as sound 11 teeth which histologically showed signs of demineralisation. However, in nine of these specimens, the demineralisation was very slight and confined to the outer enamel.

(ROCK W.P., KIDD E.A.M., Br Dent J. April 1988;164:243-247)